

- 1) If you are accelerating at a rate of  $26 \text{ m/s}^2$ , how long does it take you to reach  $70 \text{ m/s}$  if you start from a stand still?
- 2) You want to pass the car next to you because it is going too slow and you are late for school. Your initial velocity is  $30 \text{ mi/h}$ . You speed up to  $45 \text{ mi/h}$  in  $3 \text{ s}$ . You pass the car without causing an accident. What is your acceleration?
- 3) What is your acceleration in **kilometers** per hour if you go from  $5 \text{ mi/h}$  to  $120 \text{ mi/h}$  in  $0.05 \text{ h}$ ? (THINK: unit conversions needed!)
- 4)  $54\text{g} = \underline{\hspace{1cm}} \text{oz} = \underline{\hspace{1cm}} \text{lbs} = \underline{\hspace{1cm}} \text{ton}$
- 5)  $39 \text{ yd} = \underline{\hspace{1cm}} \text{m} = \underline{\hspace{1cm}} \text{in} = \underline{\hspace{1cm}} \text{mi}$
- 6)  $42\text{oz} = \underline{\hspace{1cm}} \text{qt} = \underline{\hspace{1cm}} \text{mL} = \underline{\hspace{1cm}} \text{gal}$
- 7)  $50 \text{ km} = \underline{\hspace{1cm}} \text{hm} = \underline{\hspace{1cm}} \text{dkm} = \underline{\hspace{1cm}} \text{m} = \underline{\hspace{1cm}} \text{dm} = \underline{\hspace{1cm}} \text{cm} = \underline{\hspace{1cm}} \text{mm}$
- 8)  $200\text{mg} = \underline{\hspace{1cm}} \text{g}$

Scientific Notation (9-12)

- 9) 500200
- 10) 30.7
- 11) 900000
- 12) 20490000

Write all knowns and necessary equations to solve.

- 13) Find the volume of a liquid that has a density of  $4 \text{ g/mL}$  and a mass of  $50 \text{ grams}$ .
- 14) Find the density in  **$\text{g/mL}$**  of a liquid that has a mass of  $30 \text{ kilograms}$  and a volume of  $60,000 \text{ liters}$ . (Pay attention to units)
- 15) I have an oddly shaped item I need to find the volume. I have a bucket that is  $2 \text{ foot}$  tall and  $1 \text{ foot}$  in diameter filled with water up to  $13 \text{ inches}$ . If the water level rises  $2 \text{ inches}$  when I place the object in the bucket, what is the volume of my object?
- 16) If there is a constant mass and volume, what will the effect be on the pressure if the temperature increases in a system?
- 17) How is pressure involved in a reciprocating engine?